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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/077,880	02/20/2002	Yoshibumi Matsuda	ASA-1066 6441		
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Mattingly, Stanger & Malur, P.C. Suite 370 1800 Diagonal Road			EXAMINER		
			RICKMAN, HOLLY C		
Alexandria, VA 22314			ART UNIT	PAPER NUMBER	
			1773		
			DATE MAILED: 09/03/2003	DATE MAILED: 09/03/2003	

Please find below and/or attached an Office communication concerning this application or proceeding.

## Diffice Action Summary To MAILING DATE of this c mmunicati n appears on the cover sheet with the c resp indence address → Peri d for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.		·					
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DETAILED ACTION

Election/Restrictions

1. Claims 5-6 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 4.

Claim Rejections - 35 USC § 103

- 2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fullerton et al. (US 6383668) in view of Sakawaki et al. (US 2002/0160234).

Fullerton et al. disclose a magnetic recording medium having an underlayer of CrTi formed on a NiP-plated substrate, a first ferromagnetic layer, a Ru intermediate layer, and a second ferromagnetic layer formed thereon (col. 3, lines 1-18; col. 5, lines 36-37). The reference teaches that the ferromagnetic layers are formed from CoPtCrB alloys having 4-25 at% Pt (col. 3, lines 34-37).

Fullerton et al. fails to teach the use of an amorphous film containing Ta and Ni and oxygen formed between the substrate and the CrTi layer and the amount of Ti present in the CrTi layer.

Sakawaki et al. teach the use of NiTa layer containing oxygen as an orientation determining layer under a Cr-based underlayer wherein the NiTa layer causes the Cr underlayer to have predominant orientation plane of (200) plane thus allowing the overlying magnetic layers to have a (110) orientation (paragraphs [0031]-[0038] and [0086]-[0087]).

It would have been obvious to one of ordinary skill in the art at the time of invention to add a NiTa layer underneath the CrTi layer taught by Fullerton et al. in order to provide the recording medium with the preferred (200) orientation for the underlayer and the preferred (110) orientation for the magnetic layers.

With respect to claim 3, Sakawaki teaches that it is preferable to use 1-50 at % Ti in the CrTi layer underlying the NiTa layer. The reference teaches that the amount of Ti affects the magnetic anisotropy of the overlying magnetic layer (see [0073]).

It would have been obvious to one of ordinary skill in the art at the time of invention to choose the optimal amount of Ti to add to the CrTi layer taught by Fullerton et al. it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

4. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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5. Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Holly Rickman whose telephone number is (703) 305-2642. The

examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Paul J. Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 872-9310 for regular

communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 308-0661.

Holly Rickman

Primary Examiner

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hcr

August 29, 2003